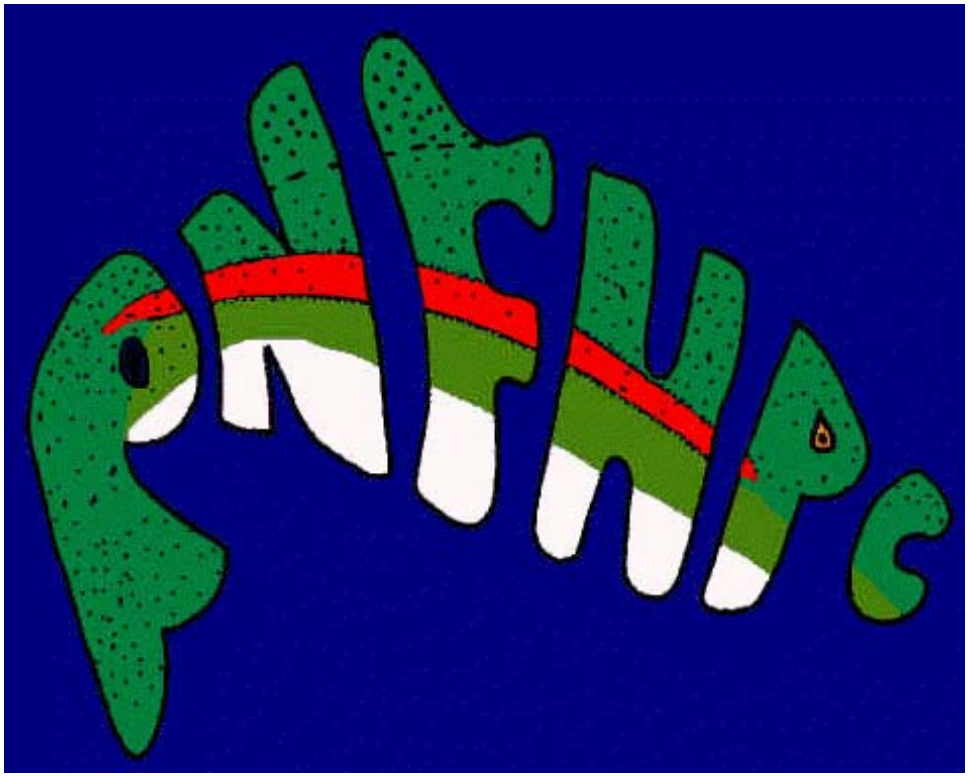
VIIIA

MODEL

COMPREHENSIVE FISH

HEALTH PROTECTION PROGRAM

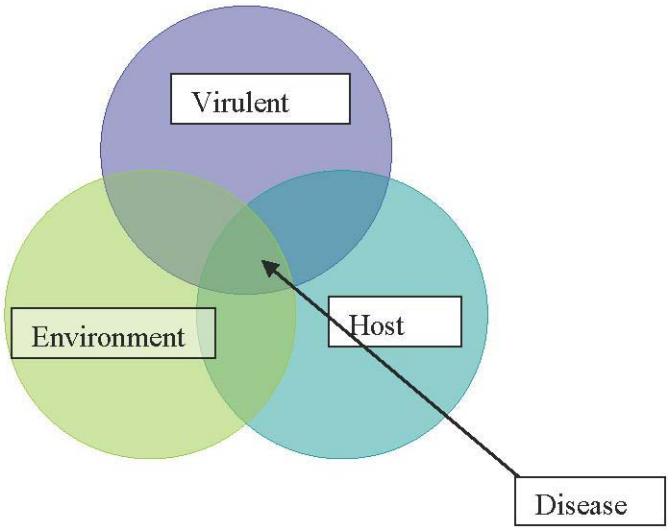


Pacific Northwest Fish Health Protection Committee
Approved September 1989
Revised February 2007

PREFACE

The Pacific Northwest Fish Health Protection Committee (PNFHPC) is pleased to offer the "Model Comprehensive Fish Health Protection Program" for use by fishery agencies, tribes and private sector fishery personnel and others striving for healthy fish stocks of all kinds. The "Model Program" focuses on pathogens of fish. However, the presence of a pathogen in a fish does not necessarily indicate that the associated disease is present.

Disease is only one of several outcomes that can occur when a pathogen interacts with a fish host. Outcomes can range from a pathogen co-existing with a fish with no adverse impact to the fish's health to a pathogen causing disease, mortality, and possibly an epidemic in the population. The final outcome is determined by three factors; the virulence of the pathogen, the susceptibility of the fish to the disease, and the environmental conditions in which they encounter one another. Sniezko (1973) graphically illustrated the interactions and relationship of these three factors with three overlapping circles as shown below. As the significance of each of the contributing factors increases, the circles can be visualized to increasingly overlap, thus enlarging the common central area that represents the circumstances under which the occurrence of disease is likely. Managers must evaluate all of these other factors, not just the presence of the pathogen, in determining the appropriate action to take. Complicating matters is the increased sensitivity of current diagnostic techniques to find pathogens at levels that do not necessarily cause disease.



The "Model Program" is just that. It represents the essentials for fish health protection to be considered, interpreted and locally implemented to prevent the spread of fish diseases, minimize the impact of those outbreaks that do occur, and aid in eliminating disease problems wherever possible. Exact use of the guidance is the right and responsibility of the user. When decisions must be made, programs changed, or budgets planned, the "Model Program" should prove useful.

Finally, this document is intended to be a living, dynamic compendium of policies and practices found effective for fish health protection. Suggestions for improvement or requests for amendments are welcome and should be directed to the Committee Chairperson or Executive Secretary.

The PNFHPC is grateful to the many contributors making this document possible. The end result, however, remains with all having a role in improving the health and quality of fish, from the hatchery helper to top level administrator and to biologists and fishers of all kinds.

Reference:

Snieszko, S. F. 1973. Recent advances in scientific knowledge and development pertaining to diseases of fish. Adv. Vet. Sci. Comp. Med. 17:291-314.

SECTION I

AREA OF CONCERN

The phrase "Area of Concern" is used throughout the Model Comprehensive Fish Health Protection Program to designate the geographic area for which the Model Program was designed. Obviously, the principles described are not unique for this area and others are encouraged to make use of the guidance as needed.

The Charter of the Pacific Northwest Fish Health Protection Committee, as amended, describes the Area of Concern as follows:

> "For deliberations of this Committee, the Area of Concern encompasses all the waters of the states of Alaska, Washington, Oregon, California, Idaho, the Columbia River Basin of British Columbia, and states adjacent to Idaho and Oregon, and the portion of the State of Montana that lies west of the North American Continental Divide."

SECTION II

FISH SPECIES COVERED BY THE MODEL PROGRAM

All fish are subject to the provisions of the Model Comprehensive Fish Health Protection Program for the Area of Concern.

It is understood and agreed to by the parties that other aquatic organisms can be added to those described above upon consensus of the PNFHPC whenever technical procedures and fish health risks make such an addition appropriate.

Aquatic Nuisance Species:
Aquatic plants or animal species that threaten the diversity or abundance of native species, the ecological stability of infested waters, or commercial, agricultural, aquacultural, or recreational activities dependent on such waters are considered aquatic nuisance species (ANS). While fish pathogens are often considered aquatic nuisance species, ANS as a group includes a variety of other plants and animals that have the potential for negative impacts on fish, fisheries, and aquatic habitats. The focus of the PNFHPC Model Program is limited to fish pathogens and does not include other ANS species. PNFHPC recognizes the importance of ANS and supports efforts to prevent and control the spread and negative impacts of these plants and animals, and encourages resource managers to include ANS considerations in resource planning and management strategies.

SECTION III

CATEGORIES OF FISH PATHOGENS COVERED BY THE MODEL PROGRAM

The purpose of this Section is to define the categories of fish pathogens covered by the Model Program, classify certain disease agents, and to specify the courses of action to be taken for each.

Three categories of fish pathogens have been identified:

Class A Disease Agents (Exotic Disease Agents) - Fish pathogens that:

1. Have the potential to cause significant economic or biological loss among wild and cultured fish; and,

2. Cannot be controlled by current methodology or therapeutants; and,

3. Are not known to occur in the Area of Concern; and,

4. Have a repeatable and robust means of detection and diagnosis; and,

5. Are included in a region wide surveillance program.

Class A Disease Agents include:

Finfish

- Exotic strains of viral hemorrhagic septicemia virus (VHSV) – Strains other than the endemic Pacific Northwest IVa strain
- *Oncorhynchus masou* virus (OMV)[b]
- Infectious salmon anemia virus (ISAV)[a]

Shellfish

European hemocyte (HIVD) and gill (GNVD) iridoviruses in oysters[b]

Whitespot Syndrome baculovirus in shrimp[a]

Yellowhead Disease rhabdovirus in shrimp[a]

Taura Syndrome picornavirus in shrimp[a,c]

Perkinsis spp. including *P. marinus*[a] .*P. atlanticus*[a] and *P. olseni*[b] in oysters and clams

Haplosporidium nelsoni and *costalis* protozoa in American oysters[a]

Marteilia spp.[a] including *refringens*, *sydneyi, branchialis* and *chungmuensis* protozoa in oysters[b]

Thraustochytrid-like Quahog Parasite Unknown (QPX) in hard clams[a]

[a] Exotic to the Pacific Northwest

[b] Exotic to North America

[c] Because there is little baseline data regarding significant indigenous diseases of crustaceans, other pathogens will be considered on a case-by-case basis as they are detected.

New disease agents may be added to this category as they are identified.

Recommendations for control of the diseases these pathogens cause include:

1. Notification of all cooperating parties (members) through the PNFHPC Executive Secretary and the appropriate Area Veterinarian In Charge (AVIC); and,

2. Destruction of all infected stocks of fish at the affected facility; and,

3. Complete sanitation of the site. Section VI of the Model Program lists procedures that may be helpful.

Class B Disease Agents (Regulated Endemic Disease Agents) - Fish pathogens that have one or more of the following characteristics:

1. Have the potential to cause significant economic or biological loss among wild or cultured fish.

2. Are difficult to control by currently available methods.

3. Are known to occur within the Area of Concern but are limited in their geographic or host distribution.

4. Have a repeatable and robust means of detection and diagnosis.

5. Are included in a region wide surveillance program.

Class B Disease Agents include:

Finfish Pathogens

- Channel catfish virus (CCV)
- Herpesviruses of finfish
- Infectious hematopoietic necrosis virus (IHNV)
- Infectious pancreatic necrosis virus (IPNV)
- Spring viremia of carp (SVCV)
- Viral hemorrhagic septicemia virus – Pacific Northwest strain IVa (PNW VHSV)
- White Sturgeon Iridovirus (WSIV)
- *Myxobolus cerebralis*
- *Tetracapsuloides bryosalmonae*
- Bacterial strains of *Aeromonas salmonicida, Yersinia ruckeri,and Flavobacterium psychrophilum* that are resistant to oxytetracycline (Terramycin), ormetoprim potentiated

sulfadimethoxine (Romet 30), or florfenicol (Aquaflor).
- *Piscirickettsia salmonis*
- *Ceratomyxa shasta*
- *Nucleospora salmonis*
- *Parvicapsula minibicornis*

Shellfish Pathogens:
- Oyster velar iridovirus (OVVD)
- *Bonamia* spp. – protozoan microcell disease in oysters
- Denman Island Disease - protozoan *Mikrocytos mackini* in Pacific oysters
- *Haplosporidium* spp – protozoan plasmodia and spores in oysters and clams
- Withering syndrome rickettsia, *Candidatus Xenohaliotis californiensis*, in abalone
- Crustacean disease agents considered on a case-by-case basis as they are detected.
- Oyster Herpesvirus

New disease agents may be added to this category as they are identified.

Recommended control measures include:

1. Notification of affected cooperating parties (members) whenever a Class B pathogen is detected at a site not recently known to be positive for that pathogen; and,

2. Retention of affected stocks on the facility until appropriate disease containment or control measures can be completed; and,

3. Appropriate controlled transfer or release of recovered or unaffected fish.

4. The destruction of affected fish may be justified in some circumstances to prevent disease spread or amplification.

Class C Disease Agents (Endemic Pathogens of Significant Concern) - This category includes all other disease agents that are enzootic within the Area of Concern but that are not necessarily of such concern as to prevent the transfer or release of fish. Although of concern, the fish diseases caused by many of these pathogens can be controlled by treatments. Many such shellfish pathogens do not cause significant mortality or losses in marketability of product.

Recommended control measure:
- Retention of affected fish stocks on the facility until all appropriate treatments or control measures have been completed.

SECTION IV

TECHNICAL PROCEDURES – INSPECTION GUIDELINES

In the United States, fish health examinations for fish imported into or transferred within the Area of Concern shall be conducted according to methods described in the latest revised edition of the American Fisheries Society Fish Health Section's "Fish Health Blue Book" (Suggested Procedures for the Detection and Identification of Certain Finfish and Shellfish Pathogens) or Standard Procedures for Aquatic Animal Health Inspections. In Canada, fish health examinations shall be conducted according to methods published in the latest revised edition of the Canadian Fish Health Protection Regulations "Manual of Compliance" (Misc. Spec. Pub. #31).

SECTION V

STOCK TRANSFER GUIDELINES

The transportation of harmful fish disease agents poses a serious threat to aquaculture, native fish populations, and other aquatic resources. In many cases, introduction of fish disease agents has been traced to the transport of fish. The model program strives to protect free-ranging and cultured fish populations from management activities that could cause the transfer of disease agents into non-endemic areas. Managers must actively participate in cooperative disease control programs to exclude unwanted disease agents from areas or facilities where they do not already occur.

Many states have laws requiring application for permits to propagate and transport fish. Instructions for obtaining application/permits to transport fish or their products are available from the appropriate agencies.

This section provides guidelines for transferring fish into or within the Area of Concern. Suggested procedures are included for (1) authorization requests for introductions of fish (including a model form), and (2) implementation of adequate disease control measures if such introductions are accepted.

A. General Policies

The purpose of this section is to provide guidance for implementing the provisions of paragraphs 2, 3, and 4 of the Pacific Northwest Fish Health Protection Program. These items are:

> *2. Prevent the importation, into the Area of Concern, of fish infected with pathogens identified by all cooperating parties to be exotic to the area;*
>
> *3. Develop methods to prevent the transfer of specified pathogens infecting fish; and,*
>
> *4. Develop strategies and implement procedures to improve the fish health qualities of hatchery water supplies, fish cultural programs, and distribution operations that reduce the frequency and minimize the impact of fish diseases; . . .”*

B. Guidelines

1. All fish to be imported into the Area of Concern must be inspected for those Class A and B pathogens they have been documented to be susceptible to prior to importation.

2. No fish may be transferred into or released in watersheds when there is evidence that such action will constitute a new exposure of the watershed to a Class B pathogen.

3. Only eggs or gametes from inspected brood stock may be transferred. Eggs must be held in isolation at the sending facility or in quarantine at the receiving facility until the brood stock inspection testing is completed.

4. All finfish eggs must be iodophor waterhardened immediately after fertilization and surface disinfected upon arrival at a receiving facility.

5. Coordination with relevant managers must occur prior to moving fish infected with, or having a history of, any Class C pathogen into a watershed where those pathogens are not known to be present,.

C. Model Application Form for Fish Introduction or Transfer

At minimum, the information requested by the following form (Exhibit 1) should be provided:

(EXHIBIT 1)

TO: RELEVANT MANAGERS

FROM: (ORIGINATOR OF PROPOSAL)

The following proposal to introduce or transfer _____,
(number)
_____, _____, _____,
(species) (stock) (size/age)
from _____, to _____
(origin) (destination)
on _____, is being submitted for approval and/or comment.
(date)

I. Destination
Receiving water and/or fish facility _____
GPS Coordinates: _____
Tributary to: (Name of stream and system)
Basin_____
Sub-basin _____
Watershed _____
Section: (If a stream) _____
Pathogen status of receiving water and/or facility:

_____ _____ _____
_____ _____ _____

II Origin
a. Pathogen history of this stock at place of origin _____
_____

b. Pathogen history of other stocks at origin _____
_____

c. Brood stock: Captive Free ranging

If free ranging, point of capture _____

d. Prior movement of lot _____

e. GPS Coordinates of sending location: _____
III Attach brood stock inspection report to this form as "Attachment 1"
IV Additional information of fish health importance
V Comments by relevant managers or concerned parties

SECTION VI

ERADICATION GUIDELINES

Section III of this Model Program identifies and defines three classes of fish disease agents for the purposes of recommending courses of action to be taken for their prevention, control or eradication. This Section provides a guide to emergency disease control procedures that should be considered for use in the event of the detection of Class A Disease Agents.

Accordingly, Section III of the Model Program identifies those fish pathogens that should be considered Class A Disease Agents for all geographic areas and waters within the Area of Concern. The detection of Class A Disease Agents requires immediate notification of all PNFHPC members and the appropriate regulatory authority and the initiation of prompt containment and eradication measures.

Other disease agents may be added to the list of Class A pathogens by individual States or river basins as deemed appropriate by the PNFHPC members involved. Preventing the introduction and establishment of all Class A Disease Agents depends upon careful surveillance of importations and ongoing fish production operations through well-planned actions.

ORGANIZATION

The following task force will be organized by the relevant manager(s) in consultation with the affected entity for the purpose of conducting a Class A disease eradication project.

A. Fish Health Professional (FHP) In-Charge: The FHP In-Charge is responsible for the field operations of the eradication task force. This person will consult with the involved agencies or tribes, other FHPs and research specialists regarding inspection, diagnosis, quarantine, fish disposal, disinfection, and prevention of further outbreaks in the quarantine buffer zones. The FHP In-Charge is responsible for collection of data on fish involved in the outbreak, obtaining watershed maps of the area, obtaining facility production and distribution records for the year preceding the outbreak, and compiling a complete epizootiological report of the outbreak.

B. Facility Manager: The manager of the affected facility is responsible for acquisition and control of supplies and equipment used in the eradication program. This person coordinates these activities with the FHP In-Charge of the task force. The facility manager is also responsible for furnishing the FHP In-Charge with production, transfer, and distribution records and for disposing of fish, if necessary.

C. Information Manager: An individual will be designated by the involved agencies or

tribes to release information to the public and to coordinate transmittal of information between agencies, tribal groups and the private sector. The FHP In-Charge may be assigned this responsibility.

QUARANTINE

Whenever a fish stock within the Area of Concern is suspected to have a Class A Disease Agent, the FHP In-Charge will immediately report this information to the appropriate agencies. The FHP In-Charge will work with the facility manager to impose an immediate quarantine of all fish at the affected facility and consult with other relevant managers to determine appropriate quarantine and investigation boundaries. After the quarantine is established, the Information Manager will send written notification to other relevant managers in the area notifying them of the quarantine and any specific restrictions that have been implemented.

If suspect fish have been transferred from the affected facility to other Area of Concern facilities within the past year, similar quarantines may be issued to receiving facilities by relevant managers until confirmatory inspection testing can be completed.

Watershed boundaries may be used to specifically determine the quarantine zone. This zone should extend to at least a five-mile radius from the affected facility and possibly further downstream if watershed conditions so indicate. Fish distribution from the quarantine zone must be halted and fishing restrictions for this area should be sought.

INVESTIGATION

The FHP In-Charge will obtain information on all shipments from the suspect facility during the previous year. Information obtained will be promptly reported to the relevant managers so that notification can be made to recipients of suspect fish.

The FHP In-Charge will immediately begin disease detection surveys to confirm the presence or absence of the Class A Disease Agent. Surveys will be made of all fish populations on the facility and within the quarantine zone. The size and location of survey sites will be determined on the basis of natural fish barriers, type of terrain, nature of the fish population, and characteristics of the disease outbreak itself. In addition, spot check surveys should be scheduled to include all susceptible fish populations located within the surrounding buffer zone, an area extending five to seven miles outside the quarantine zone.

SURVEY PROCEDURES

A. Quarantine zone surveys:
All fish populations must be sampled at the earliest possible time. If other fish facilities are located within the quarantine zone, the FHP In-Charge will call on each facility, explain the reason of the visit, the location of the infected facility, the nature of the disease, how it is spread, and advise local personnel concerning precautions necessary to prevent the spread of the disease and to whom they should report any suspicious disease signs among their own fish. The personnel at these facilities should be informed that reliable current information will be available by whatever means has been devised and be asked to refrain from spreading rumors. Strict sanitary measures should be followed before entering or leaving fish facilities in the quarantine or buffer zones.

During the period in which initial survey information is being collected from within the quarantine zone, every effort must be made to observe all fish, both cultured and free-ranging, for signs of the Class A Disease Agent and to collect representative samples from each population. Once appropriate approval has been obtained from the management agency(s) involved, samples of susceptible fish should be collected and documented as to the precise location on the facility or stream, data collected, species and size of fish, name of the collector, and any abnormalities noted. Samples should not be frozen but should be packed on ice and processed in the laboratory as soon as possible. Additional samples should be frozen at -70^{o} centigrade or preserved in the appropriate fixative (see AFS Bluebook) for documentation and future reference.

NOTE: **Suspicious disease signs among fish must be reported immediately to the FHP In-Charge.**

Strict sanitary measures must be observed by all personnel working within the quarantine zone to prevent the spread of a Class A Disease Agent by fish samples, sampling equipment, shoes, boots, tires, and by other means. Protective, disposable plastic boots should be worn when working on the facility grounds or along streams where the viable disease agents may exist. Vehicles should not be driven into fish rearing areas. Each piece of equipment or clothing used in the quarantine zone must be thoroughly cleaned and disinfected before it leaves the facility.

B. Buffer zone surveys:
FHPs assigned to survey fish populations in the buffer zone must inspect all susceptible populations in the zone at least once. There is no alternative to laboratory examination of fish samples. Any fish showing suspicious signs, whether typical for the Class A Disease or not, shall cause the inspector to conduct a close examination and to collect samples with full documentation.

DISEASE ERADICATION AND FISH DISPOSAL

Upon confirmation of a Class A Disease Agent, immediate steps shall be taken to assure the orderly decontamination of the facility. All fish will be promptly disposed of in a manner that does not further spread disease.

NOTE: A firm commitment to prompt action is essential to effective containment and eradication of a Class A Disease Agent.

When stocks must be destroyed, they should be killed and buried in a deep pit. The facility manager is in charge of stock disposal. They will secure the necessary disposal permits, equipment and materials to conduct the operation.

A fish disposal operation would consist of the following events:

- Determination that a disposal operation is necessary (FHP In-Charge with relevant managers' concurrence.)
- Clearance for disposal operation.
- Arrangement for the labor, equipment and materials needed to carry out disposal (Facility Manager.)
- Disposal of infected or exposed fish (Facility Manager).

These events should be carried out as soon as possible to limit further spread of the disease, contamination of the facility, and discharge of infected facility effluent.

The site chosen for the burial should be in full accordance with local environmental protection regulations for fish disposal. If the appointed site is on the grounds of the affected facility, the burial pit should be located with easy access from rearing units but away from areas subject to flooding. The burial trench should be at least seven feet wide and not less than seven feet deep with the length determined by allowing fourteen square feet of floor space for each 1,000 pounds of fish to be buried. As the fish are placed in the trench, they should be covered with unslaked lime. Lime is to be applied at the rate of one barrel (850 pounds) for each 10,000 pounds of fish buried. This is to hasten decomposition and to discourage burrowing animals. The trench should be filled with earth without delay and the area should be included in the cleaning and disinfection procedures.

CLEANING AND DISINFECTION

Cleaning and disinfection can start as soon as fish disposal is completed. The members of the task force involved in work in infected areas must be supplied with rubberized rain gear including boots, coats, hats and gloves. These outer garments will be removed and left in an appropriate location at the end of each day's work. These items should be thoroughly disinfected during the final phase of disinfection.

Note: SAFETY HAZARD!!!! Chemicals that kill fish pathogens can kill or injure people! Know

your chemicals! Require all personnel to read the Material Safety Data Sheet for the chemical that is to be used. Know your methods! Know your equipment! Provide all workers with top quality effective training, SAFETY equipment, and clothing. Plan each procedure carefully. Proceed with caution! **LABEL ALL CONTAINERS**.

In addition to the chemical required, the equipment listed below would be helpful in the disinfection of facilities:

1 high pressure spray unit 2 wire brushes
4 50-foot lengths of hose for sprayer 2 heavy brooms
6 pairs of rubber boots 5 five-gallon pails
6 sets of rain gear, complete 6 pairs of safety goggles
6 pairs of rubber gloves 6 respirators
1 ½-ton pickup truck 5 300-gallon horse troughs
2 gas masks 5 assorted pumps

All fish rearing facilities should be brushed clean of moss, algae, dirt, and organic wastes. Rearing tanks, incubators, troughs, outdoor raceways, and water supply headboxes and tail-races should all be thoroughly scrubbed. Consideration should be given to the treatment of the effluent from these cleaning operations to minimize the contamination problem. Earthen ponds should be drained and the entire bank area cleared of vegetation and debris. Earthen ponds should not be dried at this time and should not be entered except under close control.

Disinfection can begin as soon as the facilities are cleaned and readied. All buildings and the equipment within them should be disinfected with chlorine, or other appropriate disinfectants.

Water supplies, pipeline systems and the facility effluent should be properly disinfected. These are difficult to disinfect and success largely depends upon the length of time the disease organism is exposed to the disinfectant. In no case should chlorine be used at less than 200 parts per million for a period of less than one hour. When using chlorine, care must be taken to properly neutralize the treated water before release to the natural environment and to follow appropriate environmental agencies guidelines.

Scrubbed, hard-surface rearing units should be effectively disinfected with an approved disinfectant and thoroughly rinsed before use.

Earthen ponds, canals, and the like present special problems for disinfection. Several treatments with unslaked lime (CaO) at the rate of two tons per acre may be required. Unslaked lime is the compound of choice and should be applied to freshly-drained ponds. Consideration should be given to the complete renovation of contaminated earthen ponds.

POST DISINFECTION SURVEYS

After the facility has been cleaned and disinfected, a 30-day waiting period should be observed before actual live fish tests start. During this "cooling off" period, all rearing facilities should remain dry and, if possible, exposed to sunlight. The number of test fish should be determined by the size of the facility to be tested. Each rearing unit should be tested by placing a minimum of 100 fingerlings of the species and age most susceptible to the disease in question, in a live-box near the outlet of each rearing unit. The water in the rearing units should be held at the normal operational level. Samples of fish from various locations will be collected after 60 days' exposure for laboratory examination. All fish will be sacrificed after 120 days' exposure for laboratory examination. The test species should be regularly fed and cared for during their exposure period.

After the completion of a negative 120-day test period, fish culture may be resumed in all hard surface rearing units supplied with uncontaminated water. Production fish should be inspected thereafter for the pathogen in question at intervals of 90 days or less for at least one year.

Earthen ponds, ditches, and streams should be retested a second time. At the completion of two negative tests, these units may be restocked and the quarantine released. In instances where earthen pond and cement raceways adjoin, no production program will be initiated until the earthen ponds are determined to be free of the organism, as described above.

SECTION VII

REPORTS

A. Reports by Participants

1. Program status reports – Participating entities shall present a summary report at each PNFHPC meeting that addresses the following four topics :

a. Status of the top five diseases/pathogens affecting their programs;
b. Measures adopted or being considered for fish disease control;
c. Current status of diagnostic capabilities, technical studies, personnel, equipment and facilities for fish disease control; and
d. Concerns involving other organizations and miscellaneous factors affecting fish health protection.

B. Other Reports

1. Meeting reports – According to the Committee Charter, the Executive Secretary is responsible for preparing and submitting all of the Committee meeting minutes to PNFHPC members following the meeting as well as including them in the meeting booklets.
2. Activity reports – According to the Committee Charter, “Subcommittee and work groups should keep up-to-date internal working records. Formal reports will be submitted by subcommittees at the first Committee meeting of the [calendar] year. Ad hoc committees and work groups shall submit reports upon completion of assignments.”
3. The Chairperson of the PNFHPC or his designee shall maintain files of the reports submitted to the Chairperson and provide copies as requested or authorized by the Chairperson.

SECTION VIII

AMENDMENT PROCEDURES

As stated in the Preface, the model program is intended to be a living, dynamic compendium of policies and practices found effective for fish health protection. As such, the process by which additions and/or changes are made must not be overly cumbersome. As with the PNFHPC Charter, any changes made must reflect the consensus opinion of the member entities and should only be made after careful examination and in-depth discussion of all of the facts involved. It should also be recognized that the Program, as a "Model Program" serves only as a guideline. If consensus cannot be reached on a proposed amendment, a member entity may still decide to take such actions as it deems necessary to handle any fish health problem.

Any participating entity may propose amendments to this Model Program or its parts. Amendment proposals must be provided to the Chairperson in writing no less than sixty (60) days prior to a scheduled Committee meeting. Amendment proposals must include both the existing language in the Model Program and the proposed language changes. The Chairperson will then instruct the Executive Secretary to send copies of the amendment proposals to the Administrative Representative of each member entity as well as to representatives of entities listed under the "Liaison" section of the PNFHPC Charter.

It is the responsibility of the Administrative Representatives to discuss amendment proposals within their own organizations and develop positions prior to the Committee meeting. During this time, the Chairperson will be available to answer questions from the membership concerning the amendment proposals. At the meeting, the Chairperson will make provisions for the member proposing each amendment to present the amendment and give a short background statement: After allowing a period of discussion, the Chairperson will call for a vote by all the Administrative Representatives present or their designee. Proposed amendments will be adopted upon the consensus of these Administrative Representatives. Since those voting represent the views of their agencies, there is no need to have the signatory parties of the Model Program sign off on the adopted amendments.

If a consensus is reached, the Chairperson will instruct the Executive Secretary to have the changes incorporated into the Model Program and to distribute the revised Model Program to all concerned parties. If a consensus is not reached, the issue in question may be re-submitted for consideration and a vote at the next regularly scheduled meeting.

SECTION IX

DEFINITIONS

AQUATIC NUISANCE SPECIES (ANS) - Aquatic plants or animal species that threaten the diversity or abundance of native species, the ecological stability of infested waters, or commercial, agricultural, aquacultural, or recreational activities dependent on such waters.

AREA VETERINARIAN IN CONTROL (AVIC); The veterinarian of APHIS who is assigned by the Administrator to supervise and perform the official work of APHIS in a State or States or any other official to whom authority has heretofore been delegated or to whom authority may hereafter be delegated to act in his stead.

FISH – All live finfish and shellfish including their eggs and gametes.

FISH HEALTH BLUE BOOK - The current edition of "Procedures for the Detection and Identification of Certain Fish Pathogens" published by the Fish Health Section of the AFS.

FISH HEALTH PROFESSIONAL (FHP) - An individual who either holds or meets the requirements of one of the following certifications:
- American Fisheries Society (AFS) - Fish Health Inspector or Fish Pathologist
- Canadian Fish Health Official
- United States Title 50 Inspector (Code of Federal Regulations, Title 50, Chapter 1, Subchapter B, Part 16)

INSPECTION - The collection of a statistically valid sample of fish tissues and/or fluids for examination for regulated pathogens. This is to be performed by, or under the supervision of a Fish Health Professional. Methods used will be those described in the "Fish Health Blue Book".

IODOPHOR WATER-HARDENING EGGS - The exposure of recently fertilized finfish eggs (not more than five [5] minutes post exposure to water) to a buffered iodophor solution at the appropriate dose and duration for a specific species as specified in the State's Fish Health Policy. Follow all label instructions when administering the iodophor.

LOT OF FISH - A group of fish of the same species and age that originated from the same discrete spawning population and that have always shared a common water supply. In the case of adult broodstock, various age groups may comprise the same "lot" provided they are of the same species and have shared the same water supply while broodstock.

QUARANTINE - Keeping a group of fish in isolation as defined above and disinfecting their effluent with a residual level of at least two (2) ppm chlorine for a minimum of ten (10) minutes of contact time.

RELEASE - The liberation of captive fish into public waters.

SHELLFISH – All species of crustaceans, molluscs, or other invertebrates that are in any stage of their life cycle that is indigenous or otherwise.

TRANSFER - Any movement of fish or their gametes between hatcheries, rearing facilities, or watersheds.

WATER SUPPLY - The spring, well, stream, river, estuary, or other body of water used in the incubation/rearing of eggs or finfish/shellfish.

WATERSHED – Any body of water that meets one of the following two criteria: (1) a geographically distinct river basin that has a separate saltwater entrance, or (2) significant tributaries within a large river basin that the regulatory authority manages as a discrete unit